

Dr. Summia Perveen

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Profile

Ph.D. in Aquaculture with research experience in Aquaculture, fish nutrition, immunology, and parasitic disease control. Current research focuses on investigating the role of innate immunity in crabs against parasitic diseases. My research work uses approaches to identify ciliate pathogens and understand host-parasite interaction under different environmental factors and flow rate. In addition, how nutritional modulation influences the functional capacities and signal mechanism in hemocytes (blood cells) of crabs against ciliate *Mesanothryx* sp.

Objective

- To achieve the best in my field via hard work and sincere efforts.
- A vibrant and motivated individual with an intense pursuit of distinction. I strive firmly with complete devotion and dedication to improve my knowledge and performance to achieve my set goals. I have faith in the hard work, teamwork, and cooperation that synergy is the key to success.

Area of Specialization

- Animal sciences
- Freshwater /marine aquaculture
- Parasitic diseases control

Technical Skills

- Expert in handling feeding habits and monitoring crustaceans and fish species' health
- Expert in a pond, hatcheries management and breeding of freshwater species, routine maintenance of fish and crabs rearing systems, monitoring of physicochemical parameters, histology, and biochemical analyses (e.g. enzyme assays and chemical inventory; prepare solutions and reagents for use in the laboratory according to reported instructions)
- Expert to identify gut microbial communities in freshwater species (*Pangasius hypophthalmus*)
- Expert to observe behaviours aspects in freshwater species (*Pangasius hypophthalmus*)
- Expert in fish feed formulation, maintaining aquaculture research facilities, performing indoor and outdoor aquaculture nutrition, and disease control experiments
- Expert in identifying different cell types of fish and crabs, ciliate culture, and bacteria culture
- Skills in primary cell culture, molecular biology [Immunoassays, RNA/ DNA extraction, cloning, siRNA/dsRNA, qRT-PCR, SDS, and Western blot] and microscopy techniques [Electron microscopy (SEM and TEM), Fluorescence microscopy]
- Experience to record and maintaining experimental data using software [MS Office (Excel, Powerpoint, and Ms word), SPSS, One way-two way ANOVA, general linear model, SAS, Graph Pad, Origin, and R-programming].
- Excellent command in writing, oral, and listening to English
- Self-motivated, responsible, and able to work independently and as a team
- **Strong verbal and presentations skills:** Since 2015, presenting scientific research at both national and international conferences across the world [International Fisheries and Aquaculture Conference (IFAC) 2015, 2016, and 2017], and [Webinar in the field of parasitology, Virology, Infection Diseases, aquaculture and Marine biology 2020 and 2021].
- Experience in mentoring and supervision of both undergraduate and postgraduate students
- Experience and interest in mentoring/teaching students from diverse cultural ethnic backgrounds
- Ability to produce outcomes under pressure

Research Experience

Ph.D., Ningbo University, Zhejiang, China

- To investigate the influence of different environmental factors on the survival and population growth of ciliate *Mesanothryx* sp.
- Host-parasite interactions: Study the pathogenicity of *Mesanothryx* sp. and the resistance of hemocytes of swimming crab under different temperatures

- The influence of immunostimulants on the immunological response i.e., on prophenoloxidase cascade system and immune-related antimicrobial genes in crab hemocytes and how the proPo system mediates the anti-parasitic action against *Mesanothrips* sp.

M.Phil., The University of Veterinary and Animal Sciences, Lahore, Pakistan

- Pond management, culturing and reproduction of imported species in Pakistan.
- To improve the growth, feeding, behaviours, and breeding condition of imported catfish *Pangasius hypophthalmus*.
- To estimate the growth potential, body composition, and stress responses in *P. hypophthalmus* production in a polyculture system.

MSc, Bahauddin Zakariya University, Multan, Pakistan

- Stress responses of Indian and Chinese carps in composite culture

BSc, Bahauddin Zakariya University, Multan, Pakistan

- Microscopic identification of plant and animals cells

Education

Ningbo University, Zhejiang, China

Ph.D. in Aquaculture

March 2022

Dissertation: Immunostimulants enhances innate responses in swimming crab (*Portunus trituberculatus*) hemocytes against parasite- *Mesanothrips* sp.

Committee: Prof. Chunlin Wang (Dean of Faculty of Marine Sciences) and Prof. Dr. Fei Yin

University of Veterinary & Animal Sciences (UVAS), Lahore, Pakistan

December 2017

Master of Philosophy (M.Phil) in Zoology

CGPA 3.96/4.0 (Medalist)

Dissertation: Growth potential, body composition, and stress responses in *Pangasius hypophthalmus* production when cultured with Indian and Chinese carps

Committee: Prof. Noor khan (Chair), Assoc. prof. Fayyaz Rasool

Bahauddin Zakariya University, Multan, Pakistan

June 2014

Master of Science (MSc) in Zoology

CGPA 3.33/4.0

Dissertation: Stress responses in Indian and Chinese carps under composite culture

Supervisor: Dr. Naeem Khan and Dr. Rehana Iqbal

Bahauddin Zakariya University, Multan, Pakistan

BSc in Zoology, Botany, and Chemistry

June 2012

Dissertation: Microscopic identification of plant and animal cells

1st class

Selected Scholarships, Awards, and Prizes

- Second and third **prize awards in Ningbo University innovation and Entrepreneurship** at Ningbo University, China (2019, 2020, 2021, and 2022)
- **CSC Doctoral Scholarship**, Ningbo University (2018)
- Awarded **medal and certificate** for achieving highest marks during M.Phil., UVAS, Pakistan (2017)
- Awarded **Prime Minister Scholarship Awards (laptop and cash prize)** Pakistan for best academic performance, UVAS, Pakistan (2016)
- UVAS, **Pakistan Merit Scholarship** awarded each year for excellent academic performance (2014-2016)
- **Higher Education Commission (HEC) merit certificate** on intervarsity women cricket championship held at Quaid-e-Azam University, Islamabad, Pakistan (2012)

Additional training/ Extra-curricular activities

- Developed identification key and collection of insect species
- Sampling preservation techniques
- Participated in 5th and 6th international Fisheries symposium at UVAS, Lahore, Pakistan
- Attended and received a certificate for a seminar on “World Fisheries Day” at UVAS, Lahore, Pakistan
- Certificate of participation in the third solidary games, held at Raheem Yar Khan, Pakistan
- Certification of participation in the chief minister’s Punjab festival sports

Teaching Experience

Research associate, Department of fisheries and Aquaculture, UVAS, Lahore, Pakistan Feb. 2015 - June 2016

- Undergraduate teaching (delivered advanced nutrition and practical courses)
- Worked for pond management, culturing, and reproduction of imported species including *pangasius hypophthalmus* in Pakistan
- Undergraduate teaching (delivered zoology courses)

Teaching Assistant, Bahauddin Zakariya University, Multan

Sept. 2013 - July 2014

- Carried out the undergraduate tutorials and laboratory classes

Biology teacher

June. 2012 - July 2013

- Carried out the high-class students' tutorials and laboratory classes

Scholarly Publications

1. **Summia Perveen**, Lujia Yang, Xiao Xie, Xue Han, Quanxin Gao, Jiteng Wang, Chunlin Wang, Fei Yin. Vitamin C elicits the activation of immunological responses in swimming crab (*Portunus trituberculatus*) hemocytes against *Mesanothrips* sp. **Aquaculture**, 2021. 547, 737447.
2. Youbin Yu, Jindong Kong, **Summia Perveen**, Yuhua Lei, Bo Feng, Lujia Yang, Chunlin Wang, Fei Yin. Anti-parasitic effects of quinine sulfate on the swimming crab parasite *Mesanothrips* sp. **Aquaculture**, 2021, 737071.
3. **Summia Perveen**, Lujia Yang, Suming Zhou, Bo Feng, Xiao Xie, Qicun Zhou, Dong Qian, Chunlin Wang, Fei Yin. β -1,3-Glucan from *Euglena gracilis* as an immunostimulant mediates the antiparasitic effect against *Mesanothrips* sp. on hemocytes in marine swimming crab (*Portunus trituberculatus*). **Fish & Shellfish immunology**, 2021. 28-35.
4. **Summia Perveen**, Yuhua Lei, Fei Yin and Chunlin Wang. Effect of environmental factors on survival and population growth of ciliated parasite, *Mesanothrips* sp. (Ciliophora: Scuticociliatia) infecting *Portunus trituberculatus*. **Parasitology**, 2020. 477-485.
5. Yuhua Lei, **Summia Perveen**, Xiao Xie, Xue Han, Quanxin Gao, Chunlin Wang, Fei Yin. Host-parasite interactions: Study on the pathogenicity of *Mesanothrips* sp. and the resistance of hemocytes of swimming crab at different temperatures. **Aquaculture**, 2022. 737920.
6. Maryyum Khalil, **Summia Perveen**, Hafiz Muhammad Arsalan-Amin, Iqra Anwar, Mahrukh Butt. The Effectiveness of Silver Nanoparticles for the Treatment of Abdominal Dropsy in *Labeo rohita*. **Journal of Aquaculture Research and Development**, 2020. 11: 9.
7. Honghua Wang, **Summia Perveen**, Shucheng Shao, Kun Wang and Fei Yin. Proteomic Analysis by Shotgun LC-MS/MS of Cyst Wall Protein Components from the Protozoan Parasite *Cryptocaryon irritans*, the Causative Agent of White Spot Disease in Marine Fish. **Pakistan Journal of Zoology**, 2020. 648-658.
8. Ayub Khawar, Noor Khan, Fayyaz Rasool, Khalid Mahmood Anjum, Hamda Azmat, Khalid Javed Iqbal, Sadaf Dogar, Sadia Nazir, **Summia Perveen**, Sheeza Bano, Hira Waris, and Tehmina Yaqoob. Comparison of Traditional (Rice Polish) and Commercial Aquafeed on the Growth and Body Composition of Indian and Chinese Carps in Composite Culture System. **Pakistan Journal of Zoology**, 2018. 221-225.

Expected Publications/in progress

9. **Summia Perveen**, Noor Khan, Fayyaz Rasool, Afzal Rasheed, Khalid Javed Iqbal, Khalid Mahmood Anjum, Ahmed Mustafa. Comparison on growth performances, body composition, and stress responses in *Pangasius hypophthalmus* when cultured with Indian and Chinese carp (**Under review in Brazilian Journal of Biology**).

10. Makhrukh Butt, **Summia Perveen**, Fayyaz Rasool. Effects of dietary vegetable oils replaced by fish oil on growth performance, histology, and serum biochemistry of GENETICALLY MALE TILAPIA (*Oreochromis niloticus*) (**Under review in Aquaculture research**).
11. Makhrukh Butt, **Summia Perveen**, Fayyaz Rasool. GENETIC VARIATION BETWEEN HYBRID (LABEO 2 ROHITA♂×CIRRHINUS MRIGALA♀) AND LABEO ROHITA BY RAPD MARKERS (**Submitted to Turkish Journal of Aquatic Sciences**).
12. **Summia Perveen**, Chunlin Wang, Fei Yin. The combined effect of vitamin C and β -1, 3-Glucan in the prophenoloxidase cascade system of swimming crab against *Mesanothrips* sp. (**Manuscript in preparation**).
13. **Summia Perveen**, Chunlin Wang, Fei Yin. β -1,3-Glucan, mode of action, and uses in crab immunomodulation (**Review writing in progress**).
14. Maryyum Khalil, **Summia Perveen**, Hafiz Muhammad Arslan-Amin, Iqra Anwar, Makhrukh Butt, Fayyaz Rasool. Application of lemon extract nanoparticles against bacterial diseases in freshwater aquaculture (**Review in preparation**).

Conferences/Seminar Presentations

1. **Summia Perveen** (Sep 2021). **Invited speaker** at 3rd Webinar on Aquaculture and Marine Biology
2. **Summia Perveen** (May 2021). **Invited Speaker** at ‘Two-day webinar in the field of virology and infectious diseases
3. **Summia Perveen** (June 2021). **Invited Speaker** at ‘Two-day webinar/ online presentation in the field of parasitology
4. **Summia Perveen**. Growth potential, body composition, and stress responses in *pangasius hypophthalmus* production when cultured with Indian and Chinese carp. [**Poster presentation at International Fisheries and Aquaculture Conference (IFAC) 2017, UVAS, Pakistan, Lahore**].
5. **Summia Perveen**. Growth and stress responses in Indian and Chinese carp under composite culture. [**Oral presentation at International Fisheries and Aquaculture Conference 2016, UVAS, Pakistan, Lahore**]

References

1. Prof. Dr. Chunlin Wang

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2. Prof. Dr. Fei Yin

Faculty of Marine Sciences
Meishan campus, Ningbo University
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3. Associate prof. Dr. Fayyaz Rasool

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University of Veterinary & Animal Sciences (UVAS), Lahore, Pakistan
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